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General and complete disarmament

Effects of the use of armaments and ammunitions containing depleted uranium

Report of the Secretary-General

Summary

The present report contains views of Member States and relevant international organizations on the effects of the use of armaments and ammunitions containing depleted uranium. The Secretary-General has, to date, received replies from 12 Governments and responses from the International Atomic Energy Agency and the United Nations Environment Programme.

* A/69/50.

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I. Introduction

1. In paragraphs 2 and 7 of its resolution 67/36, the General Assembly invited Member States and relevant international organizations, particularly those that had not yet done so, to communicate to the Secretary-General their views on the effects of the use of armaments and ammunitions containing depleted uranium, and requested the Secretary-General to submit a report on this subject to the Assembly at its sixty-ninth session.

2. On 27 February 2014, a note verbale was sent to Member States requesting them to submit their reports by 30 April 2014. The Office for Disarmament Affairs also submitted a similar request to the International Atomic Energy Agency (IAEA), the United Nations Environment Programme (UNEP) and the World Health Organization (WHO).

3. To date, the Secretary-General has received replies from 12 Governments and from IAEA and UNEP. The replies received are reproduced in sections II and III below, respectively. Additional replies received from Member States will be issued as addenda to the present report.

II. Replies received from Governments

Argentina

[Original: Spanish]
[9 May 2014]

The use of armaments and ammunitions containing depleted uranium is controversial and the Argentine Republic has not included these items in its stocks, nor does it plan to do so in the future. In the light of the potential dangers to human health and the environment, a moratorium should be declared, applicable in particular to producer and user countries, until independent and conclusive studies can determine whether they constitute a violation of international humanitarian law.

Bolivia (Plurinational State of)

[Original: Spanish]
[7 April 2014]

Armaments and ammunitions containing depleted uranium have been used for a number of years as conventional weapons, mainly owing to their ability to penetrate bunkers and pierce armour on tanks and other vehicles, with often irreversible effects on people and the environment.

The toxic and radioactive load carried by these devices is often spread over an area in the form of low-level radioactive dust, which might lead to an increase in cancer rates in the affected areas.

Their effects are not clear but might be accentuated owing to synergies, as their chemical properties as heavy metals (prolonged presence in the body) compound the lifelong cumulative exposure to radiation (meaning that they would affect those using such weapons in addition to their targets).

Although such armaments and ammunitions are not intended to produce contamination, some scientists and physicians have reported that they leave behind toxicologically and radiologically harmful residues.

Upon impact, the ammunition melts, vaporizes and turns to dust, which penetrates the human body much more easily and results in different types of cancer, in addition to the direct injuries caused by the projectile. Such ammunitions also affect water quality and water supplies if they land in a populated area (in addition to cropland, which is affected for years).

Consequently, the Government of the Plurinational State of Bolivia believes that, given the effects of the use of armaments and ammunitions containing depleted uranium, the manufacture and use of such weapons in operations or conflicts should be prohibited, owing to the irreversible harm they cause to the environment and, above all, to people.

Cuba

[Original: Spanish]
[15 April 2014]

The adoption of General Assembly resolution 67/36 by a broad majority shows that the international community is increasingly and legitimately concerned about the effects on human health and the environment of the use of armaments and ammunitions containing depleted uranium.

Independent research and studies carried out among the affected population living in areas near combat zones where depleted uranium has been used, and among the troops involved in military actions in such areas, show that the contamination caused by depleted uranium poisons the environment for thousands of years and leads to an increase in the rate of cancer and other serious diseases in the population, in addition to congenital abnormalities. They have shown that the toxicity of depleted uranium is more dangerous when it is turned into dust, which can be ingested or inhaled. In that form, wind and rain easily transport it and enormously extend contaminated areas.

Data provided to the Secretary-General by countries directly affected by radioactive residues as a result of armed conflicts clearly show that the use of depleted uranium seriously harms human, plant and animal life and the environment in general, and that the radioactive contamination resulting from its use poses a long-term threat.

In the report on the issue which the Secretary-General submitted to the General Assembly at its sixty-fifth session, it was mentioned that the United Nations Environment Programme stressed that "major scientific uncertainties persisted regarding the long-term environmental impacts of depleted uranium, particularly with respect to long-term groundwater contamination. Because of those scientific uncertainties, UNEP called for a precautionary approach to the use of depleted uranium, and recommended that action be taken to clean up and decontaminate the polluted sites. It also called for awareness-raising among local populations and future monitoring."

Cuba reiterates its call on States to comply with the UNEP request by taking a precautionary approach to the use of depleted uranium until more light has been shed on the scientific uncertainties surrounding its effects.

Until further research into the effects of depleted uranium yields results, Cuba considers that the General Assembly should continue to request Member States that have used armaments and ammunitions containing depleted uranium in armed conflict to provide to the competent authorities of the countries affected, as a matter of urgency, comprehensive information about the location of the areas where they were used, and the quantities used, to facilitate the assessment, administration and clearance of the contaminated areas.

Cuba is closely following the review of the latest information in scientific literature on the effects on humans of internal exposure from inhalation or ingestion of uranium to be submitted by the United Nations Scientific Committee on the Effects of Atomic Radiation this year. The review should include all effects of uranium on human health.

Cuba recalls that depleted uranium is included in the list of regulated nuclear material, including for its peaceful uses (article XX of the IAEA statute), and that its use in armaments and ammunitions involved in armed conflict is in violation of the requirements established by IAEA concerning its export and transfer. This is because it is "transferred" when it is so used, and without the consent of the "recipient" States.

In practice, depleted uranium is also being used for military purposes by some arms-manufacturing countries, circumventing international regulations, to reduce their physical inventories of unwanted nuclear material.

It is contradictory that, while there are legally binding standards which regulate the use of nuclear material for peaceful purposes, including depleted uranium, there is no limit on the use of depleted uranium in the military sector, especially in cases where this material is used for offensive purposes to strengthen projectiles, bombs and missiles.

In this regard, Cuba reiterates the importance it attaches to the principles of international law, especially the prohibition to employ, in armed conflict, weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering. The employment of methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment, as is the case of the use of armaments and ammunitions containing depleted uranium, is prohibited.

Cuba advocates compliance by all States with article 51, concerning protection of the civilian population, of the Protocol additional to the Geneva Conventions.

Cuba reiterates that armaments and ammunitions containing depleted uranium constitute a threat to life and to the environment. Further research into their dangerous effects is necessary.

Ecuador

[Original: Spanish]
[14 April 2014]

In 2008, Ecuador became the first country to adopt a constitution enshrining the rights of nature. Paragraph 27 of article 66 establishes the right of the population to live in a healthy environment, which is in keeping with article 14, in which environmental preservation, the conservation of ecosystems, the prevention of environmental damage and the recovery of degraded natural spaces are declared to be matters of public interest. All those tenets are reflected in the development policy known as "living well", which currently governs the country's socioeconomic model.

Although the preamble to resolution 67/36 indicates that "studies conducted so far by relevant international organizations have not provided a detailed enough account of the magnitude of the potential long-term effects on human beings and the environment of the use of armaments and ammunitions containing depleted uranium", Ecuador shares the view of UNEP that the precautionary principle could be applied to matters of disarmament. The precautionary principle is an internationally recognized principle which has been incorporated into the legislation of Ecuador (the Constitution, the Environmental Management Act and its regulations and the Special Regime for the Conservation and Sustainable Development of the Province of Galapagos) and has guided its environmental foreign policy in recent decades.

Furthermore, the principles governing relations between Ecuador and other States, apart from promoting the peaceful settlement of disputes, seek the establishment of a culture of peace and hence condemn the development and use of weapons of mass destruction and weapons used indiscriminately against civilian populations, causing harm in violation of human rights law and international humanitarian law.

Unwavering in its commitment to peace, Ecuador states that it neither produces nor has used armaments or ammunitions containing depleted uranium. However, in order to enhance transparency with regard to the use of this substance in weapons of mass destruction, it believes that an accountability (reporting) mechanism for States that possess such items should be included in existing disarmament instruments. The participation of international organizations would help to guarantee impartial verification and evaluation in affected areas.

Iraq

[Original: Arabic]
[20 March 2014]

Iraq expresses its deep concern over the harmful effects of the use in wars and armed struggles of armaments and ammunitions containing depleted uranium, which constitute a danger to human beings and the environment (the air and the soil). It calls on Member States and the relevant international organizations — in particular the International Atomic Energy Agency, the World Health Organization and the United Nations Environment Programme — and academic research centres to

conduct in-depth scientific studies and research on addressing the effects of uranium on human health and the environment.

Iraq calls on the United Nations, the specialized agencies (IAEA, WHO and UNEP), all States Members of the United Nations and non-governmental organizations to adopt a proactive approach towards the danger of the use of depleted uranium in armaments and ammunitions and to condemn such use.

It stresses the importance of implementing the recommendations of IAEA, WHO and UNEP to mitigate the confirmed and potential hazards to human beings and the environment from contamination resulting from the use of depleted uranium.

States that have used armaments and ammunitions of this kind should provide assistance to the national authorities of the affected States and provide them with detailed information about the location of the areas of use and the amounts used, with the objective of facilitating the assessment of such situations and efforts to contain and address them.

Technical assistance should be provided to the affected States and communities, and suitable medical care should be provided to regions and inhabitants that have been exposed to radiation from such armaments.

The national authorities of the affected States should be called on to designate and identify contaminated areas with a view to keeping inhabitants away in order to avoid radiation contamination, and should raise people's awareness of the harmful effects of the use of such armaments and ammunitions through efforts by national and local authorities, in cooperation with the relevant international organizations.

Efforts should be made to draft a binding and verifiable international treaty prohibiting the use, possession, transfer and trafficking of such armaments and ammunitions.

Libya

[Original: Arabic]
[15 April 2014]

- Libya welcomes the role being played by the General Assembly, IAEA and UNEP in conducting research on the harmful effects on human beings and the environment of the use of depleted uranium in armaments and ammunitions.
- It stresses the importance of adopting an international instrument, legally binding on all States, to prohibit the use of depleted uranium in conventional ammunitions and armaments. Uranium is highly toxic, both chemically and radiologically, and its use entails health risks. Numerous reports have confirmed the damaging health effects on civilians and soldiers in conflict areas where depleted uranium has been used.
- It also reiterates the conclusions reached in the expert studies carried out by a number of international organizations, including IAEA and UNEP, regarding the need to take precautionary measures to mitigate potential long-term hazards to human beings and the environment. This should be done through radiation surveys and measurements, treatment, and the secure disposal of waste.

- It calls on States that have used depleted uranium in armed conflicts to provide the affected States with detailed information about the areas of use and the amounts used, and to help to address the resulting damage to both human beings and the environment.
- It calls on the United Nations, IAEA, UNEP and WHO to hold an international scientific conference on the potential long-term environmental hazards of the use of depleted uranium, the harm it causes to human beings and the experiences of affected States in detection and treatment procedures.

Mexico

[Original: Spanish]
[16 May 2014]

This information is submitted to complement the views expressed by Mexico in 2010, contained in document A/65/129.

In the period from April 2010 to March 2012, in coordination with the United States of America, Canada and the International Atomic Energy Agency, Mexico kept the promise it had made at the first Nuclear Security Summit to replace highly enriched uranium fuel with low-enriched uranium fuel in the National Nuclear Research Institute's TRIGA Mark III research reactor, which extended the Mexican reactor's operating life and made it eligible for broader collaboration under IAEA programmes.

With the total conversion of the research reactor, Mexico has contributed to nuclear non-proliferation, to minimizing the use of highly enriched uranium for civilian purposes and to international efforts to secure nuclear materials and installations.

The National Nuclear Safety and Safeguards Commission is the agency responsible for regulating, strictly controlling and authorizing imports and exports of depleted uranium used solely for peaceful purposes, although this is a dual-use material that could be used in both nuclear and conventional applications.

Netherlands

[Original: English]
[5 May 2014]

The Netherlands voted in favour of General Assembly resolution 67/36 in which the Assembly requested the Secretary-General to seek the views of Member States and relevant international organizations on the effects of the use of armaments and ammunitions containing depleted uranium.

The Netherlands recognizes the need for additional research on the effects of the use of armaments and ammunitions containing depleted uranium and appreciates that this issue is being discussed in the forum of the United Nations. However, the reference in the resolution to the "potential" harmful effects of the use of depleted uranium munitions on human health and the environment cannot so far be substantiated by scientific studies conducted by relevant international organizations, such as WHO.

The Dutch armed forces do not use munitions containing depleted uranium. In the context of multinational missions, however, it is not impossible that Dutch service personnel may operate in areas in which munitions containing depleted uranium are being or have been used by allies. The health and well-being of Dutch soldiers deployed on international missions are under the continuous scrutiny of the Government of the Netherlands. Exposure to hazardous materials must be avoided to the greatest possible extent.

Oman

[Original: English]
[29 April 2014]

The Permanent Mission of the Sultanate of Oman has the honour to inform the General Assembly that the Government of Oman, owing to the international concern about the adverse effects of armaments and ammunitions containing depleted uranium on human beings and the environment, is in agreement with the international voices calling for a stop to the production and use of such weapons and for imposing strict restrictions on their possession by States through special treaties similar to those that criminalize the use of internationally prohibited weapons.

Panama

[Original: Spanish]
[14 May 2014]

Armaments and ammunitions containing depleted uranium are military in nature, and the use of any highly dangerous chemical or radioactive material should be banned. Since the Government of Panama has no army, its security agencies neither possess nor use such items.

Panama has signed the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco), the Convention on the Physical Protection of Nuclear Material and the resolution of the Human Rights, Justice and Detention Policy Commission of the Latin American Parliament on the prohibition of the use of armaments containing depleted uranium and on their impact on human health and the environment, with a view, inter alia, to a global ban on the use of these armaments.

The Republic of Panama, aware of the need to comply with United Nations initiatives and the objectives set forth in the United Nations Millennium Declaration, which was adopted in 2000, has incorporated treaties into its legislation to help deal with the challenges presented by the use of depleted uranium by certain States parties. The Republic of Panama will also continue cooperating with the international community in its mission of peace.

Spain

[Original: Spanish]
[5 May 2014]

Depleted uranium, a heavy metal which is slightly radioactive, is used in ammunition. It is a by-product of the uranium enrichment process, whose radiological effects, however, are limited to emission of alpha particles and whose radiation level is just 0.2 per cent of that of uranium-235. In the armaments sector, depleted uranium is used to make defensive armour plate and armour-piercing ammunition, especially the coating of tank-piercing projectiles, as it easily penetrates steel.

In February 2003, the first annual report on the potential effects of depleted uranium on health was issued in response to concerns that North Atlantic Treaty Organization military personnel who had served in the Balkans as part of various national contingents had abnormally high rates of cancer. This, in turn, was attributed to their having allegedly handled ammunition containing depleted uranium or the debris of such ammunition following detonation.

According to the report, the situation presented no abnormalities. In comparison to the general Spanish population, the distribution of cancers was lower than expected, and no significant anomalies were identified in the study on exposure to the heavy metals analysed. The report highlighted the fact that the health surveillance systems for personnel deployed abroad, which had been strengthened in response to the concerns raised, had not detected any particular change in the area of operations that might have had an impact on the health of such personnel.

Spain does not have, nor has it ever had, ammunition containing depleted uranium. The use of this material is not proscribed by any international instrument.

Spanish studies have not been able to demonstrate a cause-and-effect relationship between the weak radiation detected in the debris of targets attacked with depleted uranium projectiles and the development of cancer or other diseases in soldiers or civilians. Depleted uranium presents little radiological risk, since its level of radioactivity is lower than the level of natural radioactivity. Depleted uranium is only a radiological hazard when, in its pure form, it remains in contact with the skin for an extended period of time.

Ukraine

[Original: Russian]
[30 May 2014]

As armaments and ammunitions containing depleted uranium have not been used in Ukraine, the country is unable to analyse the effects of such use.

However, low-enriched nuclear fuel (consisting of less than 20 per cent uranium-235) is used, albeit only in the nuclear research reactor at the Nuclear Research Institute of the Ukrainian Academy of Sciences. There are plans to use low-enriched nuclear fuel in an electron accelerator-driven subcritical assembly to be put into operation in 2014 at the Kharkiv Institute of Physics and Technology, which is a national research facility. The fuel in question is handled in compliance

with existing regulations in Ukraine and international requirements, including those of the International Atomic Energy Agency.

III. Replies received from agencies and organs of the United Nations system

International Atomic Energy Agency

[Original: English]
[16 June 2014]

In 2008, 2010 and 2012, the International Atomic Energy Agency communicated to the Secretary-General information regarding the effects of the use of armaments and ammunitions containing depleted uranium (included in reports A/63/170, A/65/129 and A/67/177). The Agency, in cooperation with the United Nations Environment Programme and the World Health Organization, performed a number of assessments of radiological impacts, subsequent to requests received from States affected by conflicts where depleted-uranium ammunitions were used and residues from such ammunitions remain dispersed in the environment in the form of dispersible material or ammunition fragments.

These assessments were based on in situ environmental sampling campaigns, followed by laboratory analysis of the environmental samples and radiological assessments based on defined radiation exposure scenarios considering the possible public activities in the affected regions (e.g. occupation of contaminated land, uses of the land, water consumption or activities by the population in areas where ammunition fragments can be found). Subsequently, the Agency produced reports summarizing the results of these radiological assessments for the Kuwait and southern Iraq cases in 2003 and 2010, respectively.

The general conclusion outlined in these reports and in other studies in which the Agency participated (for instance, in those related to post-conflict situations in Kosovo, Bosnia and Herzegovina and Serbia and Montenegro) is that the existence of depleted-uranium residues dispersed in the environment, when observed as confined contamination of soils, vegetables, water and surfaces, does not pose a radiological hazard to the local populations. The estimated annual exposures that could arise in the regions where dispersed residues exist would be of the order of a few microsieverts, i.e. well below the annual dose received by the population worldwide owing to naturally occurring sources of radiation, and far below the reference level recommended by IAEA as a radiological criterion for considering the necessity for remedial actions.

However, all studies in which IAEA participated stressed that the presence of large fragments or complete depleted-uranium ammunitions could result in exposures of radiological significance to individuals who are in direct contact with those radioactive materials, for example, if they are collected as souvenirs or when military vehicles which have been hit by depleted-uranium ammunitions are reprocessed for scrap metal. The advice in such cases was to identify and restrict access to the locations where such fragments or complete munitions could be found, which normally are the areas where affected war equipment remains after a conflict has ended and, subsequently, to conduct survey campaigns by the national

authorities and manage the depleted-uranium ammunition residues as low-level radioactive waste.

The Agency provided the results of the studies, including recommendations, to the national authorities in the affected regions that have the competence to carry out further surveys and monitoring activities, where applicable. IAEA stated that the studies dealt exclusively with civilian inhabitants in post-conflict environment and that the results and conclusions were valid at the time that the assessments were carried out.

In summary, according to the studies in which the Agency was involved, the resulting radiological risk to the public and the environment was not significant for the situations where depleted uranium was observed in localized contaminations of the environment with small particles resulting from the use of depleted-uranium ammunitions.

For the situations where fragments or complete depleted-uranium ammunitions were found, there is a potential risk of radiation effects to individuals who get in direct contact with such fragments or ammunitions. This risk can be mitigated with simple countermeasures conducted by national authorities as collection, storage and disposal of such fragments.

Nevertheless, it was also observed that, in a post-conflict environment, the presence of depleted-uranium residues further increases the anxiety of local populations and the results of the radiological evaluations conducted by IAEA, in cooperation with UNEP and WHO, provided the basis for public reassurance in all of the countries concerned.

The Agency has not been involved in any additional studies after those resulting in the 2010 report on radiological conditions at selected areas of southern Iraq with residues of depleted uranium. This is due to the absence of requests from States that may consider themselves affected.

United Nations Environment Programme

[Original: English]
[16 May 2014]

The United Nations Scientific Committee on the Effects of Atomic Radiation, as part of its current programme of work, is conducting a comprehensive review of the latest information in scientific literature on the biological effects on humans of internal emitters (tritium and uranium) caused by radiological exposures. The uranium review will cover the effects of natural uranium, enriched uranium and depleted uranium.

Although originally envisaged to be completed in 2014, owing to the extra work resulting from the evaluation of the levels and effects of radiation exposure caused by the nuclear accident after the 2011 great earthquake and tsunami in eastern Japan, the Scientific Committee postponed the discussion of the internal emitters (tritium and uranium) review to July 2014 and, thus, it is only expected to complete it for publication in 2015 at the earliest.